UK Research and Innovation

GCRF Global Challenges Research Fund

USAID FROM THE AMERICAN PEOPLE

Measuring impact of research and innovation for global challenges

A report on the outcomes of a joint UKRI USAID workshop on 25 and 26 October 2018 in Panama City, Panama

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Acronyms

CGIAR	Consortium of International Agricultural Research Centres
M&E	Monitoring and evaluation
NGO	Non-governmental organisation
ODI	Overseas Development Institute
OECD-DAC	Organisation for Economic Co-operation and Development – Development Assistance Committee
RAPID	Research and Policy in Development
UKCDR	UK Collaborative on Development Research
UKRI	UK Research and Innovation
USAID	United States Agency for International Development

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Foreword

As international development organisations working to tackle global challenges through investments in research and innovation programmes, we recognise the inherent need to understand, measure and evaluate the impact we strive to deliver. In an increasingly interconnected world, working in silos and relying on past measurements of success, such as citations, is no longer enough. Research and innovation function in a system of multiple stakeholders, beyond academia and government. Funders, researchers, implementers, private sector, NGOs and policy makers need to work together and understand each other's roles in the much wider research innovation impact system if we truly want to address development challenges. Measuring social progress is not easy and in an environment that too often demands short-term results, we need to measure and demonstrate the value of long-term, system-based approaches.

The joint UK Research and Innovation (UKRI) and United States Agency for International Development (USAID) workshop in October 2018 provided a timely opportunity to discuss these challenges and opportunities. UKRI and USAID were joined by 39 representatives from academia and non-profit and government organisations for the two-day workshop in Panama City, Panama. Together we shared best practices and understanding across funder, researcher and policy maker perspectives on how to measure and increase the impact of development-oriented research and innovation programmes.

This report summarizes the key discussions, learnings and recommendations that emerged over the two days. We hope this report furthers the fruitful engagement that took place in Panama City around this crucial area for development.

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Purpose of this workshop

BACKGROUND

As funders of research and innovation programmes that tackle global challenges, both UKRI and USAID strongly believe in the importance of measuring the impact of our programmes. Understanding impact better helps up to validate and improve our strategies and hold ourselves accountable to the people whom we seek to serve. We look forward to the day when foreign assistance is no longer necessary and we seek to measure the impact of each investment as it helps other countries on their journey to self-reliance. UKRI and USAID are improving our research and innovation support to better help our partner countries increase their ability to produce and translate research and innovation into real solutions for their own development challenges. To achieve these aims, we need to ensure that we 1) understand what research and innovation impact is, 2) have the right tools to measure impact, and 3) know how to communicate it effectively for shared learning. Inherently, this represents an ongoing process in which collaborating and sharing knowledge with other funders of research and innovation is key to ensuring that we are at the forefront of best practices. With these goals in mind, UKRI and USAID joined together to host a workshop on measuring the impact of research and innovation programmes focused on global challenges.

AIMS OF THE WORKSHOP

The primary aim of this workshop was to share best practice and understanding across funder, researcher and policy maker perspectives on how to better measure the impact of research and innovation for development. This wide variety of invitees were necessary to help better understand 1) how different contextual factors affect our collective ability to measure impact, and 2) the new models or new measurement frameworks that will help us to increase our ability to understand the impact of research and innovation programming. To do this, we purposely created discussion opportunities designed to:

- understand the meaning of research and innovation 'impact' in the context of international development and the system of actors involved in achieving that impact;
- identify key measurables, gaps and shortfalls in measuring impact;
- establish next steps to improve measurement methodology of the impact of development research and innovation programmes generally in the development community;
- refine guidelines for funders, researchers, innovators and research organisations to help them articulate, achieve, and capture impact through improved design of future programmes; and
- deepen partnerships between UKRI, USAID and other partners who are interested in research and innovation impact.

PREPARATORY LITERATURE REVIEW

To better understand the gaps that could be filled by a workshop such as this, we placed it in the context of previous learning on measuring research impact in development. International development organisations and their stakeholders are increasingly interested in measuring the social and economic outcomes of research and innovation programmes. However, traditional impact metrics for research and innovation programmes do not fully capture these outcomes. As well as the challenge of identifying the right metrics, development research is difficult to evaluate due to the substantial time lag between research funding and application, as well as the difficulty of attributing social outcomes to research inputs (Bornmann, 2013; Penfield et al., 2014; RAND, 2006).

The problem with traditional metrics

Basic research is typically evaluated by academic measures like publications and citations (Bornmann, 2013; RAND, 2006). Meanwhile applied research, such as technology development and innovation, is often measured by licensing income, patents and other measures of technology transfer to the private sector (Jacobson et al., 2014; Sigurdson et al., 2015). These metrics often underestimate the productivity of researchers in low and middle income countries and reflect disparities in scientific funding and infrastructure. Peer-reviewed publication data and citation counts provide a measure of academic relevance, but reveal little about health and economic or social outcomes. Clearly there is a trade-off between easy-to-measure proxy outcomes, such as citations, and the more-difficult-to-measure, yet increasingly demanded, social outcomes such as improved health and quality of life (Banzi et al., 2011).

Innovation metrics such as intellectual property, licensing income, patents and technology transfer are commonly used to measure the economic impact of innovation and are employed internationally, but only capture a small portion of innovation activity even in developed countries (Aldridge and Audresch 2011; Fini et al., 2010; Perkmann et al., 2013; Sigurdson et al., 2015). Public sector innovation and the development of pro-poor products and technologies, two common areas of focus for development programmes, fall almost entirely outside the purview of standard innovation metrics.

This suggests a need for alternative approaches to traditional metrics to capture a wider range of research impacts – particularly social benefits.

Alternative approaches to measuring and understanding research impact

Recognising this gap, some organisations have developed measurement and/or evaluation systems. The UK Collaborative on Development Research (UKCDR) recently developed a framework to use multiple approaches at different stages of the project, from pre-call to post-award, to assess social impacts and promote research policy/uptake from the start (UKCDS, 2017), The UK's Research Excellence Framework (REF) assesses impact outside academia through impact case studies (King's College London and Digital Science, 2015; REF, 2012). And USAID has health, food security and innovation metrics for measuring outcomes of research in these sectors. In terms of methods, contribution analysis has been employed by several organisations, including the UK Department for International Development (Vogal and Punton, 2018) and the US National Institute for Occupational Safety and Health (Downes et al. 2018), to trace backwards from a policy change to understand the influence of research inputs. Innovate UK, part of UKRI, has published an evaluation framework for business-led innovation, an important part of the research and innovation system that provides a variety of possible approaches, measurements and methodologies to evaluate business-led innovation (Innovate UK Evaluation Framework, 2018).

Overall case studies and application of conceptual frameworks are the predominant methods for measuring the social outcomes of research (Banzi et al., 2011; Bornmann, 2017). Conceptual frameworks include:

- the Payback Framework developed by Buxton and Hanney (1996) to measure the returns from health research;
- the Overseas Development Institute (ODI)'s Research and Policy in Development (RAPID) framework that looks at external influences (socioeconomics, culture), political context (politics and policymaking), evidence (research, learning and thinking) and links (media, advocacy, networking) to understand the connection between research and policymaking (ODI briefing paper, 2004); and
- the Research Utilization Ladder (Landry et al., 2001) which uses a scale, described as a ladder, to identify factors that explain how a researcher progresses (or not) from research creation to research transmission to research application, the highest stage.

In the development sector more generally, a growing number of evaluations are using randomised controlled trials (RCTs) and quasi-experimental designs to measure development outcomes and attribute them to particular interventions (Cameron et al., 2016). These methods have been applied primarily to intervention-based development programming such as education reforms, agricultural programmes and health service provision (Cameron et al., 2016). However, organisations are starting to apply these methods to research programmes; for example, CGIAR recently concluded a four-year pilot effort to carry out and improve capacity to conduct impact assessments of agricultural research (CGIAR, 2017). Using experimental and quasi-experimental approaches to evaluate research presents an opportunity for new knowledge about causal effects but is not without its own challenges. RCTs have been critiqued for not appropriately investigating the 'how' and 'why' of impact and because randomisation may not be possible, desirable, or ethical in complex development contexts (Hammer, 2017; Iverson, 2003; Stern et al., 2012).

USAID and UKRI have been following these advances in measurement of impact and have recognised several related gaps in our programming and partnerships. Some of these include institutional awareness/use of appropriate impact measurement methodologies, the lack of consistent understanding of methodological limitations and advantages, and inconsistency between funders, researchers, and implementers in how and when they are used. A desire to address these gaps in measurement and evaluation of research programmes sparked this workshop. Organisers and participants were especially interested in learning and adapting how better, more systems-aware, measurement could lead to greater understanding of the pathways from research/innovation to impact and increase understanding of the underlying drivers of research uptake.

Workshop design

The workshop was designed to foster maximum participation, networking and discussion among attendees – encouraging them to share their experiences, seek opinions, extract knowledge and identify common challenges and potential solutions. It was structured to enable flexibility and provide opportunities for participants to not only contribute to sessions but to direct the topics of discussion.

DAY 1 – FRAMING DISCUSSIONS AND SHARING BEST PRACTICE

The first day of the workshop focused on sharing knowledge and understanding of impact and impact systems, as well as sharing best practice in measuring impact. This was carried out through two main sessions that aimed to frame the discussions in Day 2.

Group framing discussions: In the opening session participants worked in groups of six to eight to discuss definitions, understanding and interpretations of impact, and to identify key challenges. This included a systems-mapping exercise to identify stakeholders – outlining their specific roles, what incentivises and constrains them, and how they interact with one another.

Best practice presentations: A few attendees representing funders, researchers, innovators, NGOs and policy makers were invited to share their experiences of best practice, challenges, solutions and how their organisation understands and conceptualises impact for research in international development. The sessions given were:

- How to deal with attrition in assessing impacts of agricultural innovations? A case study of the livestock sector in Nicaragua – Dr Ricardo Antonio Labarta, International Center for Tropical Agriculture
- Measuring Impact: Research + Education → Impact – Dr Bram Willems, Centro de Competencias del Agua
- Informing REDD+ policy – An assessment of CIFOR's [Center of International Forestry Research] Global Comparative Study – John Young, ODI
- Securing Water for Food (SWFF) – A Grand Challenge for Development – Monitoring and Evaluation for SWFF Dr Ku McMahan, USAID
- Pathways from Evidence to Policy Change: Perspectives from J-PAL – Cillian Nolan, the Abdul Latif Jameel Poverty Action Lab (J-PAL)
- Impact of Development Research – A Non-Academic Perspective – Dr Ticora Jones, USAID/U.S. Global Development Lab
- Evaluating the Global Challenges Research Fund – Heidi Peterson, UKRI and Jose Argudo, UKRI (Innovate UK)
- Challenge of Creating Culture change – Paola Franco, National Secretariat for Science, Technology and Innovation (SENACYT) Panama

Unconference: An unconference is a side meeting that is organised, structured and led by the people attending it. Instead of passive listening, all attendees and organisers are encouraged to become participants, with discussion leaders providing moderation and structure for attendees.

whatis.techtarget.com/definition/unconference

At the end of Day 1, participants were invited to submit proposals for 'unconference' sessions. The inclusion of the unconference format enabled participants to shape the workshop agenda, identify and discuss areas of common interest.

DAY 2 – EXPLORING THEMES AND ADDRESSING CHALLENGES

The second day built on the broader discussions of Day 1 by diving deeper into specific themes and challenges of measuring impact in research and innovation and by identifying potential recommendations and solutions. This occurred through unconference sessions that were created by participants and World Café group discussions exploring key themes.

Unconference: Twelve participants submitted eight proposals for sessions that ran on Day 2 of the workshop, covering a range of topics:

- identifying basic skills for policy makers, researchers and communities to understand each other;
- estimating social impact;
- contribution analysis;
- advice for regional development actors;
- measuring impact in arts and humanities;
- impact for whom? Bring stakeholders together; and
- responsibility of global and local actors in technology and data for development.

World Café group discussions: Following the unconferences, all participants attended four discussions exploring key themes for measuring impact in research and innovation programmes. Each group built on the discussions of the previous group(s), identifying recommendations and practical actions for the workshop delegates. The four areas discussed were:

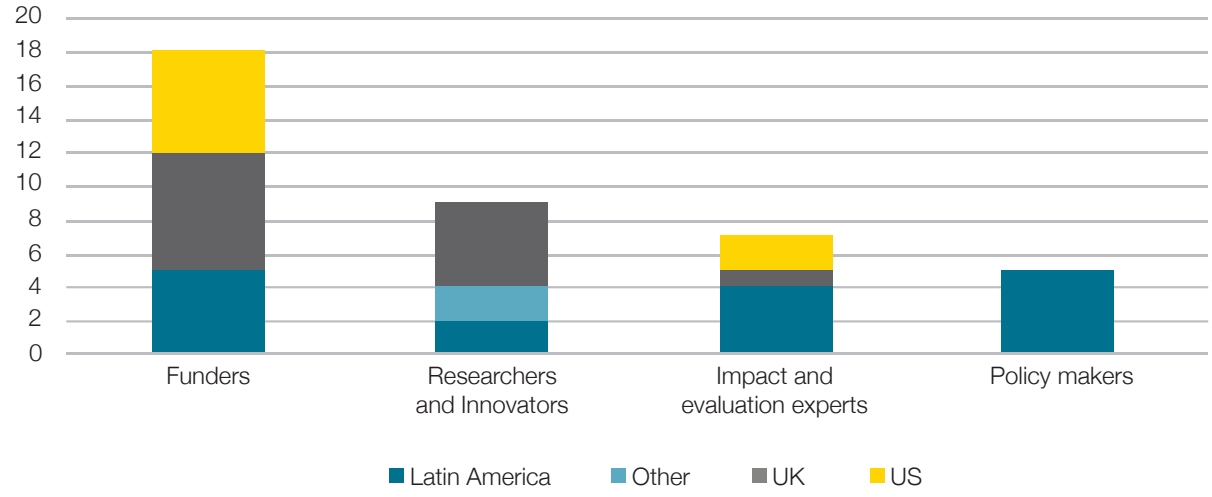
- Beyond Papers and Grants – How do we truly measure the impact of research and innovation programming?
- Communicating Results – How to turn the evidence that is generated into evidence that is use?
- Defining Impact in Real Terms – How do research and innovation actually fit into a plan for impact and growth?
- Support Where It's Needed Most – How can international donors actually help research and innovation stakeholders achieve impact?

Workshop close: All participants came together to draw up learnings, next steps and actions from the workshop discussions.

BREAKDOWN OF ATTENDEES

The workshop was attended by 39 participants from 14 countries and included researchers, funders, NGO-based evaluation experts and policy makers, all with a vested interest in measuring the impact of research and innovation programmes. A key objective of the workshop was to include the perspectives of these key stakeholder groups, as well as to bring together a diverse range of expertise, knowledge and experiences.

Figure 1: Workshop attendees by region and type



Workshop results: Setting the scene

DEFINING IMPACT

The research, innovation and development sectors are full of different conceptualisations of impact. The workshop included an early opportunity to discuss these and agree on a common understanding for the rest of the workshop. During the conference it was agreed that impact can be defined as either a change to the status quo or as a means to preserve it. Participants generally hewed to the Organisation for Economic Co-operation and Development – Development Assistance Committee (OECD-DAC) definition of impact as: "positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended" (OECD-DAC, 2010).

It was agreed that the specific impact should be defined at the level of an individual intervention or policy. This definition should arise from the policy or intervention's own aims and objectives, with some underlying measurement considerations, including the following:

- Impact definitions should be contained within a boundary or framework but allowed to evolve and adapt to meet the requirements of policy makers and evaluators alike.
- Well-defined objectives provide a clear vision of overall aim and the different steps needed to achieve the desired impact.
- Logic models are a key tool for mapping the pathway to impact. The development of such logic models should involve individuals, stakeholders, researchers and donors in order to have a concrete and consolidated impact definition.
- In evaluating impact, participants highlighted the importance of identifying appropriate comparators and shared a variety of different methods for conducting impact assessments.

Participants recognised the complexity associated with defining impact and identified several types, dimensions, magnitudes and timescales that should be considered when defining specific impact. Table 1 summarises these variables.

RESEARCH TO IMPACT DEPENDS ON A SYSTEM OF ACTORS

Alongside the exercise of defining impact, attendees were asked to identify the system actors who are involved in taking research to impact and map out the roles, behaviors and relationships between them. Each group came up with a very different approach to mapping this system and their combined insights are presented here.

Table 1: Matrix of variables needed to define impact

Types	• Social • Economic • Environmental • Strategic • Financial	All of which can be: • direct • indirect (spillovers) • tangible • intangible • positive or negative • experienced differently across subgroups (differential effects)
Dimensions	• Intellectual • Institutional/political • People • Cultural/social • Behavioural	
Magnitude/ Scope	• Small scale i.e. impact of the individual or community • Medium scale i.e. impact at the regional level • Large scale i.e. national or international impact	
Timescales	• Usually depend on scope but impacts can be of immediate effect, or due to occur in the short, medium or long term. • This also refers to the lasting effect of impacts as they can be short term or have an even lasting effect (i.e. structural change).	

Note: There is another layer of unintended impacts (positive or negative) that have occurred due to an intervention but they were not planned when delivering the policy

MAPPING THE IMPACT SYSTEM

Together, the groups identified a research to impact system involving a series of actors with their own goals, incentives and motivations, coming together in a combined process for implementing policy and programmes. One of the primary findings was that different actors can take up multiple roles in a system. One group mentioned that "it's difficult to reduce people to singular dimensions. To best understand the system, we may need to embrace complexity". For example, both researchers and innovators often overlap in this system as they seek to develop new solutions to complex problems. Table 2 describes the roles, incentives and links between these actors.

In addition to identifying the system actors and the roles, several groups described elements of how the "research and innovation to impact" system should function. They identified resource and implementation barriers that naturally exist in the system and came up with the following insights.

- System actors get together through a series of governance structures designed to build trust, cooperate, incite reciprocity, and develop a mutual benefit to build capacity and enable knowledge creation.
- The relationship between actors is complex, as there are always different agendas. However, trusted partnerships between these system actors are necessary to truly achieve impact. Good partnerships will account for the fact that relationships, incentives and roles can vary depending on cultural settings. Research donors and social scientists could work together to empirically study the contexts and pathways under which different types of research achieve impact.

Table 2: Actors in the impact system, role, incentives and links

Actor	Roles	Incentives	Links
Civil society (beneficiaries, religious communities, CSOs, etc.)	• Demand for research • Uptake • Research actors • Funders • Identify needs and challenge	• Opportunity cost • Improve welfare	• Institutional mechanism and protocols
Donors and funding agencies	• Funders • Technical direction • Implement policy	• New knowledge • Social impact	• Research and innovation ideas • Agenda setting
Media	• Communication	• Stories that resonate with their consumers	• Information sharing
Private sector (Small enterprises to large multinationals)	• Funders • Drive innovation	• Financial gain • Better connection to consumers • Improved market opportunity	• Technology transfer • Marketing influence
Development implementers and NGOs	• Implement programmes • Research partner • Connect with community	• Financial support • Better ways of implementing	• Organisational structure • Translation abilities
Government bodies (ministries, legislative, local and national)	• Allocate resources • Public agenda • Partnerships • Public goods	• Political revenues (short term) • Improve governance • Efficiency	• Policy instruments (funds, facilities, infrastructures, regulations)
Academia, scientific societies and think tanks	• Produce evidence • Knowledge • Insights • Communication • Innovation • Build intellectual capacity • Translate into policy	• Publications • Grants • Curiosity/satisfaction • Career advancements • Patents	• Receive support from funding organisation • Needs assessment generation • Technology transfer • Data

- System actors should combine and interact with already existing pathways, as opposed to developing completely new ones (where possible) to coordinate and achieve maximum impact. This can be achieved by the presence of individuals or organisations that perform the role of facilitator and mediator. This role would serve as an external mediator between two or more actors to translate their different languages and help them achieve their overarching and individual goals. They can also help non-experts avoid exercising undue influence in areas of practice that are unfamiliar to them.

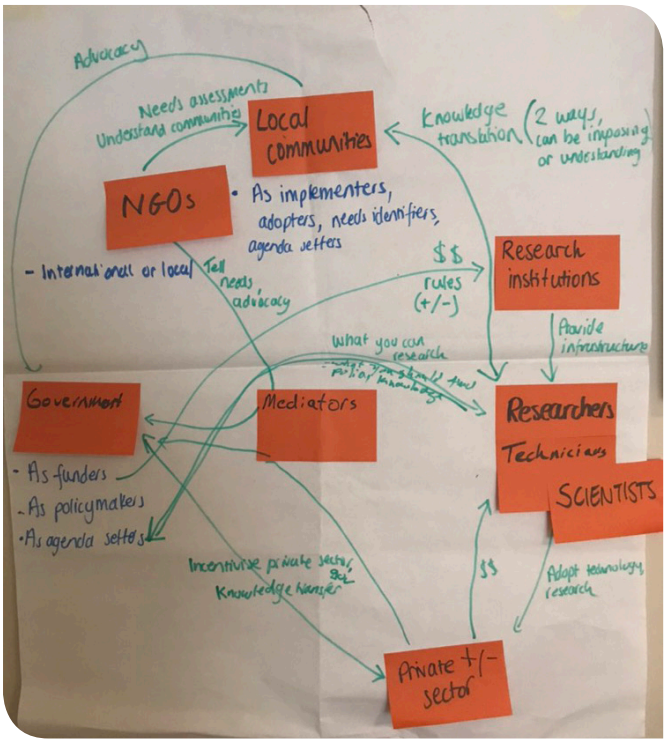


Figure 2: Example group framing discussion - mapping the impact system

Challenges in taking research to impact

Taking research to impact and measuring meaningful successes, failures and lessons is not easy in any sector. There are many challenges, particularly with the need to improve existing practices and approaches. This situation is no different for research and innovation programmes hoping to maximise impact in tackling global challenges, and indeed it was the rationale to hold this workshop and bring together people grappling with these challenges. The workshop attendees identified the key challenges in the initial framing discussion and these were enriched through discussion during the two days. This section summarises the key challenges that emerged during the workshop discussions and sessions.

Resources: Not surprisingly, many of the participants mentioned a lack of resources. Time, financial and award constraints limit the opportunity for learning around impact.

Timescale to effect: Timescale and limitations of programme cycles present significant challenges in measuring and identifying impact, particularly longer-term societal impacts. The time between research inputs and measurable outputs rarely fits within the typical timeframe of a regular research project. Often the impact does not become clear for many years after the project closes and funding ends, however, there is increasing demand on researchers to demonstrate change, success and value for money. Latency between research inputs, outputs and impact presents a number of challenges including:

- How to encourage and engage with people who have moved on from the research/innovation project. By the time impacts become tangible, researchers may no longer be involved and reporting mechanisms will no longer be in place.
- How to implement impact measurement beyond the programme cycle when resources have dried up.
- Current project cycles and demands promote an environment for short-term results and impact measurement which limit the ability to demonstrate the value of long-term approaches.

Responsibility: There is a series of actors with their own goals, incentives and motivations in the research and innovation system, which is optimised for the production of research and innovation to occur relatively effectively. However, the system drivers do not seem to be optimised for translation of the resulting research and innovation to development impact. It is not clear what is required of these actors and how they should work together towards a common goal. A significant challenge in contemporary research support systems is a lack of identified actors to mediate between researchers and those with the responsibility and financial capability to track and measure impact of research and innovation programmes. This issue is particularly acute for longer-term impacts beyond project life cycles. Without anyone driving the agenda and supporting better system-level coordination there is a danger of flagging commitment from both researchers and donors.

Quality data: A fundamental requirement of developing strong baselines and metrics for impact measurement is access to good quality data. There are issues with existing data and its use that present obstacles to taking research to impact.

- Quantity and quality: Developing a strong baseline can be hard to achieve with limited, hard-to-access and poor-quality data. The quantity and quality of data varies between countries and contexts, which is a significant challenge for research on global issues.
- Comparable, useable, and relevant: Past data collection on research impact has focused on easy-to-measure impacts (e.g. citations) and is no longer relevant or adequate. A lack of comparability across datasets presents a challenge for those looking to use data to measure cross-sector societal impact.
- Access: There is an urgent need to improve access to data and create robust relational databases, develop tools for sophisticated analysis of data and provide platforms to access data and tools. However, improved access increases the likelihood of misinterpretation of the data. Thus better access must be complemented by development of skills needed to ensure appropriate and effective use.

Defining anticipated impacts: Defining anticipated impacts, identifying effective measurement, and choosing suitable methodologies present challenges for research and innovation programmes' striving to provide comprehensive evidence of the true impact of their work and how it contributes to wider long-term societal changes.

What impact and impact for whom: Identifying what the impact is and who benefits from it is fundamental to effectively choosing metrics for measurement and determining what success is. Impact can mean different things for different people and groups, which makes selecting an approach that covers understanding across all stakeholders difficult. Caution is needed when defining research impact as narrow definitions may overlook potentially important unintended consequences.

Measuring contribution effectively: Certain impacts are rarely achieved through one research or innovation project alone. Research may have contributed to impact in combination with a range of other social, political, environmental and economic factors that may not be directly related to the research itself. There are issues in determining what counts as a contribution, to what scale and how much credit should be attributed to the research. There are only limited resources for contribution analysis with most funding regimes.

How to measure unintended consequences and learning from failure: Research impact tends to highlight positive effects associated with research activities, while excluding or downplaying negative outcomes. However, null or adverse impacts can be important results from which lessons are learned. It's important to create organizational norms that allow learning from "failure" without reputational risk. If people lose money or jobs because of failure this decreases the incentive to learn and share.

Communication: Promoting research and innovation impact requires effective identification, engagement and communication with all stakeholders from communities to researchers to policy and decision makers. There are a number of barriers to effective communication within and between these groups including the following.

- A lack of direct engagement between policy makers and communities raises questions on how local issues are factored into policy agendas.
  There are challenges facilitating these links.
- Researchers may lack the time, talent, and resources to implement and carry out engagement effectively.
- There remain challenges in technical language between different groups, as well as, across research disciplines. For any architecture around impact measurement to be valuable and effective across multiple agencies, a common vocabulary and semantics are important.

The following sections of this report outline the potential approaches, solutions and techniques workshop participants identified for addressing a number of these challenges.

Workshop results: Addressing challenges

IMPACT IS ABOUT PEOPLE

A key theme that continually emerged in discussion is that ultimately impact is about people – at every stage of the research and innovation to impact process. The literature has different conceptualisations of the different stages and associated actors through the pathways to impact. This section focuses on two interrelated themes that emerged throughout the conference: relationships and communication.

Relationships

The impact 'system' discussed earlier in this report is based upon a complicated and evolving group of people who are involved in the realisation or nonrealisation of research to impact. This theme was returned to later in the conference, where workshop participants discussed the importance of establishing meaningful relationships with several key groups, including research beneficiaries and champions for research uptake.

Research participants and target beneficiaries: Workshop attendees emphasised that research participants and the target beneficiaries of the research should be meaningfully involved at all stages of the research and innovation process. One of the key reasons for this is that the desired change could be different for a group of stakeholders from how it is for the researchers. It was also highlighted that it is important not to make assumptions about people living in poverty. Accurate and effective impact is more likely to be achieved and measured when researchers and innovators engage with these stakeholders to understand the complexities of their situation throughout the research and innovation process. This can also enable 'insiders' to be part of the 'solution' (in this context, research and innovation leading to the development of technological, practical and policy solutions to development problems). Human-centered design has been one approach to maximising this engagement.

Champions and mediators: Discussions also highlighted the importance of identifying 'champions' – strategically placed who can promote the research and innovation findings for greater impact. These people may operate in the academic, political, commercial or public space. UKRI shared the role of 'Challenge Leaders' in the Global Challenges Research Fund (a UK government initiative to fund research that addresses challenges in developing countries). The Challenge Leaders are academics who are strategically placed to collectively make sure the different research and innovation activities make the most possible impact through the fund. Participants also highlighted the role that 'mediators' or 'brokers' can play in building relationships between the different stakeholders in a research system; for example, facilitating a relationship between a researcher and policy makers.

These mediators could have a formal role in a research project or could be more informal. Participants discussed that NGOs can play an important role in mediating the relationships between research beneficiaries at the community level, and researchers and policy makers.

Building relationships: It was noted that the relationships between actors in the research and innovation system are complex, as there are often different, competing agendas. Part of the research and innovation process should, therefore, involve stakeholder analysis to better understand these dynamics in order to build more effective and meaningful relationships. Stakeholder analysis can range from informal discussions in the research team to the use of more sophisticated techniques, such as the influence-interest matrix (discussed in next section).

It is also important to recognise that relationships can vary depending on different cultural settings that can limit or bias impact measurement. For example, power imbalances can be created through the dynamic of 'expert' and 'non-expert' which inhibit the free flow of information. Regardless of techniques used to understand the relevant stakeholders in a research and innovation process, ultimately investing time and building trust is crucial to creating these relationships. This relies on building trust to support strong, open and honest communication.

Communication

Communication is an essential part of research and innovation to impact; it should be well targeted and specific to different types of stakeholders. In a breakout session, workshop participants brainstormed a large set of different stakeholders that a research and innovation team may wish to communicate findings to, including:

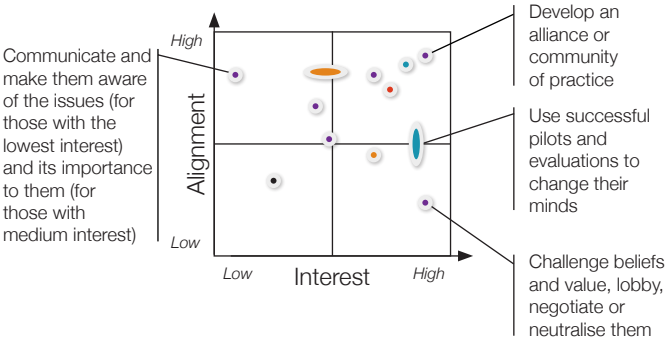
- government (including local government);
- beneficiaries;
- researchers;
- wider academia;
- funders;
- other donors;
- press;
- public;
- private sector;
- implementers; and
- wider development community.

Workshop participants then discussed the different approaches and techniques that would be effective for each of these groups. It emerged that different methods would be effective for different groups, and that this effectiveness also depends on the wider context that the research and innovation process is operating in. Using different media (such as videos and infographics) can be useful in tailoring communication for different audiences. Participatory processes, such as involving key groups in the 'sense-making' of research findings or co-creating recommendations, can further facilitate communication and learning.

Workshop participants also discussed that language is a crucial barrier to research and innovation communication. Participants challenged the norm for researchers to only publish findings in English with the assumption that this fosters the control of knowledge by the global North.

It was also raised that communication is a skill – which is not easily taught through a training session. Effective communication skills take time and experience to develop and deploy.

Figure 3: The alignment-influence-interest matrix



Alignment-influence-interest matrix

The influence-interest matrix is commonly used in stakeholder analyses. The alignment-influence-interest matrix (Mendizabal, 2010), developed by the RAPID team at ODI, was shared during the breakout session (Mendizabal, 2010). This matrix includes alignment with the research findings/recommendations. It allows individuals or groups to be mapped depending on their level of interest and alignment with the research/evaluation findings and their level of influence on the uptake of these. This can help inform a communications strategy for how and who a research/evaluation team wants to target (e.g. increase the level of alignment with findings in a certain group).

PROMOTE LEARNING THROUGH ORGANISATIONAL MANAGEMENT

Organisational culture was identified as a primary factor for successful measurement of research and innovation impact in development. One of the breakout sessions focused entirely on the practical elements people should consider as they use impact measurement as a growth and learning opportunity.

Learning agenda

Creating a formal learning agenda was identified as a key starting point for organisations seeking to make the most possible impact. This should be strategic, based on a living theory of change that identifies knowledge gaps that are of high interest, and within the organisation's capability to uncover. This theory of change should allow for interrogation of both 'low-hanging-fruit' impacts as well as others that are crucial to the organisation's end goals. The involvement of an organisation's partners in the learning agenda was also identified as crucial for success. This can be done through site visits, capacity-building efforts, and building a shared strategy with partners. Attendees also recommended setting up systematic learning processes that go beyond traditional monitoring and evaluation (M&E). These could involve traditional research questions and strategic grants to build learning objectives on each arm of an activity.

The attendees also recognised the challenges to systematic learning that many organisations face. These include time and financial resources necessary for due diligence in reviewing results, variable organisational and individual commitment levels to learning, and risk averse organisations that refuse to adapt. They offered some suggestions to overcome these challenges including:

- establish a dedicated learning core;
- use research designs that provide answers regardless of a positive or negative result; and
- train M&E with best practices, flexible rules and intention to change or find new approaches or partnerships.

To effectively execute a learning agenda, the attendees recommended established processes for using learning to adapt or change programmes. These include using the organisational structure as part of the learning agenda. Staff and partners should understand the roles that each team member or organisational unit plays in the learning process and where/how information should flow. This is especially crucial in partnerships where there may be confusion about who has responsibility for learning and adapting. The attendees also identified some practical considerations that will help organisations establish and execute a functional learning agenda:

- Encourage donors to provide opportunity for scaling/follow-on awards to foster learning from the initial effort.
- Work with implementing partners to create a simplified, shared learning agenda.
- Recognise that 'success' is not binary and learning can be nuanced.
- Plan for the human element in partnerships and learning processes. This includes recognising the unintended impact of programmes on staff/institutional memory. If people are at risk of losing money or jobs because of failure this decreases the incentive to learn and share.
- Consider methods to capture secondary and tertiary impacts in learning agendas. This may require more permissive and equal contracts.
- Recognise difference between success and failure in programme/project and implementation.
- Institutionalise process change. Recognise that this takes time, bureaucracy demands and a willingness to take risks to increase the impact of the organisation.
- Consider how the trust between and within organisations contributes to or detracts from how learning is shared.

How to deal with failures

If an organisation is honest and forthcoming in its learning agenda, it will likely encounter occasions when it has failed to have the desired impact. How that organisation identifies and responds to failure will have a direct relationship on its ability to continue to adequately measure impact and to subsequently adapt and grow. The attendees identified several practical reasons why some solutions fail and how to use these failures as learning opportunities.

Cultural misunderstanding from project initiation was identified as the primary cause of failure for research and innovation solutions that do not achieve the desired impact. This misunderstanding can range from making inappropriate assumptions about target beneficiaries to not understanding the communication-style differences between partners. Other notable failure predictors were: a lack of financial and personnel resources dedicated to learning, rigid partnerships that do not allow for adaptation, time lag between implementation and evaluation, and organisational cultures that punish failure and learning.

When asked to recommend best practices around learning, the group tended to reflect on both process and organisational culture-based solutions. With respect to process, the systematic documentation and analysis of failure was considered the most important solution. There is a human tendency to ignore failure, which can limit learning and cause future programmes to also fail. However, if an organisation has a process established to investigate and document why an intervention failed to achieve its goals, then it is more capable of recognising larger trends and lessons across and within its programmes. This requires trusted partnerships that share a mutual commitment to share data, donors that provide financial and human resources to learning, and communication channels that break down organisational silos. Finally, tracking of external system indicators, positive and negative deviants, and post-implementation monitoring will yield vital information on programme success.

With respect to how improved organisational culture can affect learning, the attendees recognised that there is a correlation between specific traits of organisational leadership that predict individual commitment to learning from failure. Figure 4 illustrates this relationship.

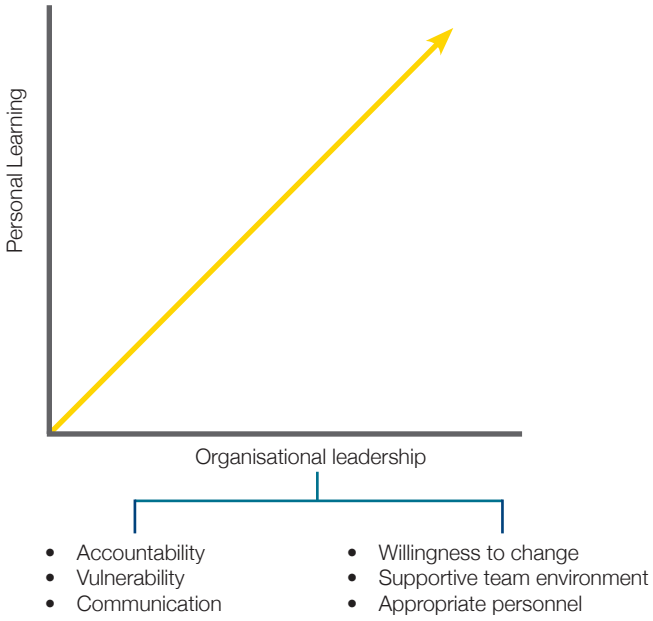


Figure 4: Supportive qualities in organizational leadership were identified by workshop participants as having a direct correlation with the ability of individuals to learn from failure and implement those learnings for increased impact.

Learning from failure presumes the organisation is willing to recognise any element of failure. Tolerance for 'failure' can be indicative of a healthy organisation or programme and the following are the organisational behaviours that will help to accomplish this.

- Define success versus failure should be defined ex ante and set expectations accordingly.
- Make it safe for people sharing failure publicly.
- Create a culture of evaluation, rather than measurement.
- In the case of null results, mobilise financial resources for partners to learn and retool so they can identify paths to innovation from failure and still be valuable.

ROLE OF DONORS

As funders, the workshop presented an opportunity for both UKRI and USAID to understand what we can do as donors to support people working on research and innovation programmes to achieve impact. During one of the breakout sessions we asked participants to identify what donors can do differently to assist programmes in achieving and measuring impact, from the perspectives of local governments, NGOs and research organisations/ institutions. The session validated that many of the donors have the same constraints or issues, and that some of the issues applicants faced could be helped by more sharing among donors, including working more closely when developing joint partnerships.

Common issues raised by workshop participants included areas where funders could be more open on their decision-making process and the internal restraints they face to help applicants understand how to submit better applications and achieve the results and impact that funders want.

Capacity building

Capacity building to improve organisational strength and project implementation was identified as a key need, especially among local partners. This ensures legacy and sustainability for these partnerships and funder investments. With an emphasis on programme implementation aspects that are important to donors such as M&E and gender analysis, the participants expressed interest in learning more about how donors use M&E for decision-making and how programme analysis that accounts for gender equity can be used to improve project implementation. M&E is used as a tool for adaptive management and learning among donors, and donors should communicate these lessons and share internal toolkits and training materials that have been adapted for external audiences.

Additionally, participants identified the need for financial management and organisational capacity building. As donors strive for sustainability, the ability of organisations to manage funds will allow them to depend less on outside organisations, to serve as prime implementing partners, and to access more research and innovation funding. Increased financial management capacity will allow local organisations to compete for independent sources of funding and become more sustainable.

Monitoring and evaluation (M&E)

Participants emphasised the need for more incorporation of M&E into project development and implementation, specifically on the part of the local organisations. It was expressed that M&E was often thought of as an 'end-of-project' inspection device as opposed to a tool that can be used for adaptive management and decision-making. It was also expressed that donors see M&E as their role and thus do not provide an adequate budget to researchers and implementers to perform rigorous M&E that includes a baseline assessment, mid-term monitoring and end-of-project evaluation. Funders need to provide a realistic M&E that will allow them to strengthen the research and implementation, not just check the progress or final product. Lastly, participants expressed a desire to learn from donors how they use M&E in their own programmes, how they have learned from M&E, and what does and does not work as evaluation tools.

Equitable partnerships

Attendees commented that short timescales and lack of funding to meet new partners, particularly in person, were barriers to achieving success in working together through differing cultural norms. Participants in multiple groups felt that it was important to have true co-design and equitable partnerships at both the funder and researcher or project levels.

Partnerships between donors are important in creating equitable partnerships at the project level. Some funders are more familiar with some regional areas than others – in this case it was felt some agencies do not understand Latin America. Donors should try to embed their staff in organisations in different regions, or with partners they are planning joint calls with. At a minimum, funders need to meet in person with partners when working together and create a joint vision and plan from the beginning. When developing joint calls with funding agencies from developing countries that focus on international development, it is particularly important that the interest is driven by the developing country. Fairer more equitable partnerships between funders from developed and developing countries is important for ownership, strengthening capacity, long-term sustainability, as well as for helping engagement with local and indigenous communities and delivering overall impact (Dodson, 2016). Attendees also felt that strong external communication about the joint partnership and priorities between funders is key.

Funders should also think about adding ethical considerations about what it means to do research with local communities and what the communities get in return. Sometimes funding structures can encourage unethical situations, such as treating communities as research commodities. In ethical considerations, it should be clear who is getting what benefits out of the partnership.

Donor reforms

The participants generally felt that donors need to work together more in events like this one and share best practice. Donors could be more open in their decision-making about strategy and M&E and more flexible in designing their programmes.

Donors should be more open about their strategy development and policies: Donors can be more open about how they use data and M&E to develop strategy and how to communicate this clearly. This can add value, by showing how funders have changed their thinking and learned what has not worked. To some attendees, donors often appear hesitant to show what has not worked, which contributes to a sense of inconsistency in funding priorities and use of evidence when developing policies and strategies.

One group remarked that inconsistency in funding priorities between donors can have a negative impact on the sustainability of organisations if they are constantly forced to change focus. Governments or funders could create units tasked to better match calls with government priorities, community needs and links with researchers.

Donors should work together more: Participants shared many positive and negative experiences with different funding schemes from around the globe, but agreed that donors should work together for wider benefits – and pool resources – whether within a country, or on a certain subject area or theme.

- Donors should collaborate more and share best practice on reforming internal processes, toolkits, what they have learned and how they use the lessons learned. One example discussed was how funders should require gender analysis – USAID and other funders have toolkits and guidelines that could be shared. By working together for a wider culture change, this could be moved from a requirement to an element necessary for success.
- Donors should align strategies where they can, and share information on their projects and strategy. This could include sharing databases on what they are funding to identify areas where they could pool resources and have better impact by working together.
- In some countries, other partners such as private sector partners could be used with caution – this depends on the country and context.

Donors should be more flexible: Participants felt more flexibility from donors could help them improve the impact of investments – allowing them to be more risky, but also to fund those projects that will have the most impact. Having the flexibility to adapt budgets can assist projects in creating new partnerships and responding to emerging and changing objectives as projects develop.

- Donors cannot always be flexible, but could consider explaining why and communicate the donor's constraints.
- For international partnerships at the researcher or project level, donors should be flexible with mechanisms for finding and working with international partners. For example, some funders include consultation stage with local governments or other sectors to help with this.
- Follow-on funding and tiered M&E processes could be used to fund riskier projects or provide more funding to those projects that will achieve more impact.

MEASUREMENT SUGGESTIONS

A primary goal of the workshop was to discuss frameworks and approaches to measuring development impact. While unsurprisingly, the attendees did not discover a universal methodology for measuring all impact, they did uncover some important principles, method considerations and recommendations.

1. It is important to consider qualitative designs, including narrative, outcomes evaluation and return on investment when evaluating the impact of development programming. An appropriate and complementary blend of qualitative and quantitative evidence and impact indicators can be extremely helpful in understanding impact.
2. Impact attribution is exceedingly difficult to establish but can be estimated by measured contribution. Contribution analyses can help to identify and disentangle impact when multiple factors or actors are involved. Some examples of these analyses include:
   a. Trace study: track back from a policy change to identify the inputs and contribution to a change.
   b. RAPID Outcome Assessment: Workshop environment involving many people who were involved in a process. Start with where the current context is and track changes in behaviours in actors over time and why. Connect links between actors at points where large changes happen.
   c. Redstone Strategy approach: Choose a policy change that research can claim to contribute to and investigate the economic impact of policy change versus cost of research. Identify factors that were in place before research versus after and what the research contributed to.
3. Be explicit about the objectives, goals and measurement resources at the beginning to include impact at the forefront of research and innovation program planning. To determine if research and innovation are likely to have impact you need to track the following levels
   a. Do you have an idea of what the research will achieve?
   b. Is the programme doing what is said it would do (and if not, why not)?
   c. Are the outputs appropriate to the audience?
   d. Are people aware?
   e. Does your evidence reflect the desired change in behavior?
   f. What are the contextual changes in environment that could be causing the change instead of your interaction?
4. Understand and categorise your level and timing of impact. These impacts can occur in terms of content (policy, legislation), discourse, attitudes, approach or behaviour and can all scale against different actors at different levels. Participating in larger networks can increase the impact of your research or intervention. Timescales to impact and scale are particularly important, and tricky, to understand.

Conclusions and recommendations

SUMMARY OF LEARNINGS

At the outset of this workshop, both UKRI and USAID anticipated that we would come to a more general model or framework of how to measure the impact of research and innovation. To our surprise, what we came away with was a deeper understanding of the need for nuance and intention with respect to impact measurement. It is unlikely that a unifying 'general model' for measuring impact exists. Rather, we must understand the role that the research and innovation has in the system they operate in, then incorporate the most system-relevant tools and methods for measuring that specific impact from the beginning. As such, UKRI and USAID believe this workshop did achieve the primary aims of sharing best practice and understanding across funder, researcher, evaluation expert and policy maker perspectives on how to better measure the impact of research and innovation for development. The wide variety of invitees helped each other to better understand 1) how different contextual factors affect our collective ability to measure impact, and 2) what the new models and measurement frameworks that will help us to increase our ability to faithfully understand the impact of research and innovation programming are. Importantly, we learned that:

- There are many different measures of research impact ranging from academic outputs like citations to innovation outputs to social and behavioral change. The appropriateness of each measure depends on the nature and goals of the research intervention/programme.
- In the context of international development, what constitutes research and innovation 'impact' depends on the goals of the intervention/programme and is highly influenced by the surrounding system of actors and institutions. It is not enough for researchers and innovators to drive impact, all system actors must work together to negotiate the role of research and innovation in the system.
- A litany of challenges and shortfalls must be addressed to effectively measure impact. These include resource limitations, communication pitfalls and navigating system dynamics as basic as defining impact and contribution. A wide and customisable set of tools is available to facilitate overcoming these obstacles.
- Funders, researchers, innovators and research organisations can agree on a subset of best practices to help them achieve and capture impact through improved design of future programmes. Many of these best practices focus on improving communications and relationships between different system actors.
- Workshops like this can serve as important knowledge-sharing and relationship-building opportunities for those who want to increase the impact of research and innovation in international development. The partnership between UKRI and USAID has been particularly deepened with this respect and we appreciate our new connections with the workshop attendees who will continue to be valuable partners in the years to come.

PARTICIPANT RECOMMENDATIONS

In the final session, we asked the workshop attendees to report on their primary general recommendations for development organisations which are interested in creating a research and innovation system that effectively measures impact. Their recommendations are summarised as follows:

- The practice of defining and measuring impact from the outset requires a degree of forethought and engagement that some organisations and partnerships may be unaccustomed to. Therefore, it is important to advocate for learning budgets and governance structures that prioritise impact measurement as an important element of learning agendas.
- International development funding agencies should increase collaboration and contact with each other to learn and to set practical norms around measuring impact in their sponsored programmes.
- All organisations and partnerships should have a normative environment around risk tolerance/ management. This includes a culture change to see failures as an opportunity to learn.
- Partnerships between funding organisations and implementers should be structured to permit free dialogue and emphasise capacity building for learning agendas that prioritise impact measurement among partners.

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Appendix 1 measuring workshop attendee impact

At the end of the final session, attendees were invited to submit one word to sum up their experiences. The result is below, with the three most common responses being: inspiring, useful and collaborative. Workshop attendees were also invited to complete a post-event survey.

77%

of respondents plan to collaborate

Attendees most liked:

- the openness of discussion;
- the diverse perspectives and experiences;
- the funder–researcher interaction; and
- the collaborative spirit present during the conference.

Attendees least liked:

- the tight timings of sessions; and
- that there was not more time for further discussions and networking.

In response to the question – is there anything you will change about your work as a result of this workshop? – attendees answered that they would:

- focus more on communication, particularly reporting evaluation findings to the public;
- ensure that they report unexpected impacts of projects;
- reach out more actively to researchers from different disciplines; and
- use some specific methodologies discussed at the conference, such as the idea of keeping an 'impact journal'.

Quotes:

- "This was a chance for us all to grow [in] knowledge together"
- It was a "great mix of attendees with different backgrounds and priorities from funders to the funded!"
- "I am excited about continuing collaboration on these topics"

Attendees gave the conference an average score of

77 out of **100**

Respondents were also asked if they are planning on collaborating with fellow workshop attendees. More than three-quarters (77%) of respondents said that they have specific plans for collaboration, including applying for joint funding and designing joint programmes.

UKRI and USAID plan to follow up with workshop attendees 6 to 12 months after the conference to see if the workshop has had any impact on their work, and if any collaborations developed.


dynamic
outstanding
very useful
experience
information
interdisciplinary
informative
great conversations
estimating
exhausted
refreshing
insightful
illuminating
diverse
enlightenment
inspiring
intriguing
eye-opening
avalanche
inquisitive
enriching
smart
useful
innovative
hope-inspiring
impactful
rewarding
thanks
collaborative
instructive
interesting
sharing
thought-provoking
changed
stimulating
diversity
challenging
invigorating
lots to do
big thinking
helpful
enabling

Appendix 2 workshop participants

Name	Organisation
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